

IN THE CLAIMS

The listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Original) A finite state automata building block comprising:
 - a plurality of node elements that store a current state of a finite state automata evaluation;
 - a plurality of programmable interconnections that fully connect the plurality of node elements;
 - a symbol evaluation unit having a corresponding symbol for each of the node elements, the symbol evaluation unit evaluating an input to provide a symbol match determination;
 - a state transition evaluation logic that transitions the node elements from one set of states to another set of states upon receiving a determination of a symbol match and enabled interconnection;
 - a node element initialization mechanism to initialize the node elements to a specified value;
 - an evaluation termination mechanisms to determine if the node elements have reached a specified evaluation termination state; and
 - a stitching mechanism that activates a set of programmed state transitions of one or more target finite state automata building blocks upon detection of a specific state of the node elements.
2. (Original) The finite state automata building block of claim 1 wherein the stitching mechanism includes one or more registers to specify the specific state.
3. (Original) The finite state automata building block of claim 2 wherein the stitching mechanism includes one or more registers to identify the one or more target finite state automata building blocks.

4. (Original) The finite state automata building block of claim 1 wherein activating a set of programmed state transitions comprises:

combining the set of programmed state transitions with a current state of a finite state automata evaluation of the target.

5. (Original) The finite state automata building block of claim 1 wherein the finite state automata building block is connected to one or more target finite state automata building blocks via a set of interconnections.

6. (Original) A finite state automata building block comprising:

a plurality of node elements that store a current state of a finite state automata evaluation;

a plurality of programmable interconnections that fully connect the plurality of node elements;

a symbol evaluation unit having a corresponding symbol for each of the node elements, the symbol evaluation unit evaluating an input to provide a symbol match determination;

a state transition evaluation logic that transitions the node elements from one set of states to another set of states upon receiving a determination of a symbol match and enabled interconnection;

a node element initialization mechanism to initialize the node elements to a specified value; and

two or more evaluation termination mechanisms each of which determines if a corresponding set of the node elements has reached a corresponding specified evaluation termination state.

7. (Original) The finite state automata building block of claim 6 wherein each of the two or more evaluation termination mechanisms includes a register containing the corresponding specified evaluation termination state.

8. (Original) The finite state automata building block of claim 6 wherein each of the two or more evaluation termination mechanisms includes a register to indicate that the corresponding specified evaluation termination state has been reached.

9. – 21 (Canceled)

22. (Original) A finite state automata building block comprising:
- a plurality of node elements that store a current state of a finite state automata evaluation;
 - a plurality of programmable interconnections that fully connect the plurality of node elements;
 - a symbol evaluation unit having a corresponding symbol for each of the node elements, the symbol evaluation unit evaluating an input to provide a symbol match determination;
 - a state transition evaluation logic that transitions the node elements from one set of states to another set of states upon receiving a determination of a symbol match, enabled interconnection, and a counter that counts the occurrence of a specified set of states having reached a specified counter value;
 - a node element initialization mechanism to initialize the node elements to a specified value; and
 - an evaluation termination mechanisms to determine if the node elements have reached a specified evaluation termination state.
23. (Original) The finite state automata building block of claim 22 wherein the occurrence of the specified set of states is a part of a regular expression definition.
24. (Original) The finite state automata building block of claim 23 wherein the specified set of states is contained in a state specification register.
25. (Original) The finite state automata building block of claim 23 wherein the specified counter value is contained in a counter value register.